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mend clay lined with bricks, flags, and other cheap and convenient materials for forming a shallow pond or reservoir, communicating with the brine pan, and acting as such cooler. A pan of considerable size lengthways, having the heat applied only to part of it, would operate (more or less according to its length and dimensions) to the forming of salt in this manner; because in that case the parts of the pan not heated, would be in effect condensers or coolers to its heated parts; but the extension of the pans would operate against the saving of expense. By the addition of the coolers a much greater quantity of salt will be made in the same space of time, than can be made in the same pans or boilers without the coolers or condensers.

Patent of Mr. Charles Le Caan, of Llanelli, Carmarthenshire, for an apparatus to be added to axles and wheels, so as to impede or check their action. Dated Feb. 1810.

Mr. Le Caan's new check for carriages, consists of a bolt attached to the axle, in the direction of its length, near the nave, in such a manner, that by shooting it forward, its head runs into the back of the nave, which has a ring of cast metal, attached to it, with certain parts projecting from it, against which the bolt is driven, when it is desired to lock the wheel of the carriage.

The bolt is moved by a lever, with or without the assistance of springs; which lever may be connected with the carriage by chains or cords, by pulling which the bolt is locked or unlocked as required.

A bolt and lever may be attached next each wheel of the carriage if thought necessary, but it is probable that one for each of the hind wheels will be sufficient.

Observations.... An obvious objection occurs to this mode of checking carriages; by it the strain will be thrown entirely on the nave, which is the weakest part of the wheel, and the least able to sustain it; and the longer the spokes are the greater will be this strain, as their length will operate as a lever to multiply the

impulses of the sole, against the road, when dragged along it, in the force of their operation on the nave. The common sort of naves are so much cut and weakened by the mortises for receiving the spokes, that they require to be spared as much as possible: instead of having any additional strains applied to them: and for this reason (as well as for their greater durability in other respects, and not being liable to split or open by the weather) cast iron naves cannot be too much recommended; the use of which, we are happy to see, is increasing greatly in Ireland, particularly about Dublin: those of this kind commonly used, are of a sufficiently light and strong construction, and only require to have moveable boxes added to them (which may be easily contrived) to render them entirely convenient, and durable in a perfect state.

Patent of Mrs. Phillis Bown Thomson, of Birmingham, for an improved mode of making Umbrellas and Parasols. Dated April, 1809.

The invention for which this patent is taken, is a case for an umbrella or parasol, composed of several sliding joints, on the same construction as those of a telescope, which are forced up above the umbrella, over the part which contains the ferule, when the umbrella is required to be raised; and which are drawn down again when the umbrella is shut.

Several substances are mentioned of which those cases may be made, most of which are sufficiently obvious not to need repetition, but it is probable horn or japanned paper would be most preferred, as metal would be found inconvenient on account of its weight and uncommon appearance.

The whole when the case is drawn down, will resemble a walking stick. The part of the handle which is covered by the umbrella when closed, is made of a small tube, to take up less room, and is connected with the part that holds the ferule, by a thick wire, that passes through both. The part of the handle, at the end held

in the hand, is made of the same thickness as the largest joint of the case, which shuts close on it, when drawn over the umbrella.

The number of joints of the case must depend on the length of the part that projects beyond the umbrella, and holds the ferule; but in general, three or four will be sufficient.

Twelve figures of the umbrella in various states is given in the specification of the patent, which will prevent any mistake from arising in its construction to those who wish to copy it when the patent is expired.

Observations.... It will be difficult to make umbrellas of this kind sufficiently strong and durable without rendering them clumsy. If the cases are made to fit tight, they will soon wear out the covering of the umbrella; if the bones, runners, and joints are made small, so as to take up little room, they will soon break; and if the cases are made easy, and the other parts of the umbrella strong, it can scarcely avoid appearing too massive when shut up; perhaps the nice medium may be found, after many trials, which will best comprise the advantages without the inconveniences of the invention. As this, however, is a lady's patent, we must not criticise it too much, but will rather conclude with wishing it may be sufficiently profitable to her, to induce others of her sex to turn their attention to the useful arts, for which we are convinced, they are in no wise deficient in the abilities and talents requisite.

Method of preventing the Accidents which frequently happen, from the Linch Pins of Carriages breaking and coming out; by Mr. J. Varty, Coach-maker, Liverpool.

Trans. Soc. Arts.

In Mr. Varty's method of securing linch pins, a small groove is cut in front, close to the bottom of the aperture, through which the linch pin passes, in which a small piece of iron turns on a pivot in such a manner, that when the linch pin is removed it may be pushed back into the aperture, which the latter has just quitted, so that the wheel may

be taken off or put on; but when left to itself it hangs down in front of the wheel, so as to prevent its slipping off in case the linch pin should drop out or break, as it cannot be forced forward without breaking the pivot: the linch pin is fastened on in the usual manner.

This contrivance has been tried in a stage-coach, which has run from Liverpool to Litchfield, a distance of 84 miles, six days in every week, for six months; during which time several instances have occurred, in which the linch pins have broke or come out, but owing to their places being supplied by the means above described, no accident has happened. It is well known that coaches are so frequently upset, more from the linch pins breaking than from any other cause, which renders this invention of the more importance.

Several certificates were sent to the Society of Arts, both from stage-drivers, and others, of the many accidents which happen from linch pins breaking, and of the efficacy of Mr. Varty's contrivance; for which the Society voted him their silver medal.

Account of a Red Earth found in Jamaica, which has all the properties of Italian Puzzolana.

Trans. Soc. Arts, v.5, p. 215.

Mr. Brown of Jamaica, who sent a quantity of the red earth to the Society for the Encouragement of Arts, &c. thus describes his method of using it, and its properties.

"To one measure of the red earth, add two of well slacked lime, and one of sand; let them be well mixed and wrought like common mortar; with fair water, and made up in a heap: in about eight hours it will begin to acquire a hardness, and the heap must then be cut down and well mixed over again, and be smartly worked and wet morning and evening, for a whole week, before it is fit for use. After it is laid on, it must be strictly attended, while it dries and hardens, to close any crack that may then appear in it, for about forty eight hours, after which time it is generally out of danger.

But if any cracks should appear, after it is quite dry (when used for the